HIV and AIDS in Saskatchewan 2014

Annual report release date: December 1, 2015

Purpose

This report examines HIV and AIDS surveillance data reported in Saskatchewan to provide an up-to-date profile of individuals diagnosed with HIV and AIDS in the province. The annual report focuses on those cases reported in 2014 within the context of trends and developments in the epidemiology of HIV in Saskatchewan from 2005-2014.

Summary:

This annual report provides an epidemiological review of reported HIV and AIDS surveillance data in Saskatchewan to the end of December 31st, 2014.

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Executive Summary

People living with HIV

- For the third year in a row, the number of new HIV cases decreased in 2014 for males and females.
- HIV affected a wide range of ages from teenagers to seniors; however, while rates declined among young adults in 2014, the burden shifted to older individuals, specifically males over 50 years of age.
- The majority of people living with HIV were from the three largest urban centres.
- There was a marked decline in people with HIV who self-reported Aboriginal ethnicity.
- Injection drug use remained the highest self-reported risk for acquiring HIV infection.
- The majority of people diagnosed with HIV in the past decade are still alive.

People with AIDS defining illness

- Almost half of those diagnosed with AIDS in the past surveillance decade are still living.
- Half of those diagnosed (14 of 28 cases) with AIDS in 2014 were already late in their disease progression.

The profile of people living with HIV in Saskatchewan

The number of newly identified HIV cases decreased in 2014 for the third year in a row

In 2014, 112 HIV cases were reported in Saskatchewan, a 13% decrease compared to 2013 and 44% below a peak of 199 cases diagnosed in 2009. A total of 1,761 lab confirmed HIV cases have been reported since HIV monitoring began in 1985, 86% of whom have been diagnosed in the past 10 years. This data does not include those cases currently living in Saskatchewan who were diagnosed previously outside of the province.

There was a steady increase in the annual number of HIV diagnoses from 79 cases in 2005 (7.7 per 100,000) to a peak of 199 cases in 2009 (19.2 per 100,000). (Figure 1) The peak in 2009 related, in part, to enhanced efforts to find new HIV cases who may have been infected for a number of years but had not been tested. The number of cases remained somewhat constant at 175 to 186 cases (16.2-17.2 cases per 1000,000) in the next three years, 2010-2012, but dropped notably to 129 cases in 2013 and continued to decrease in 2014 to 112 cases.

The national HIV rate remained stable between 2005 and 2008 then gradually declined to a plateau in 2012. By comparison, the Saskatchewan HIV rate surpassed the Canadian rate for positive HIV cases in 2006 and remained over double the national rate until 2014 when the Saskatchewan rate was just over 1.5 fold the national rate (9.8 per 100,000 versus 5.8 per 100,000). (Figure 2)

Government of Saskatchewan

Fig 1

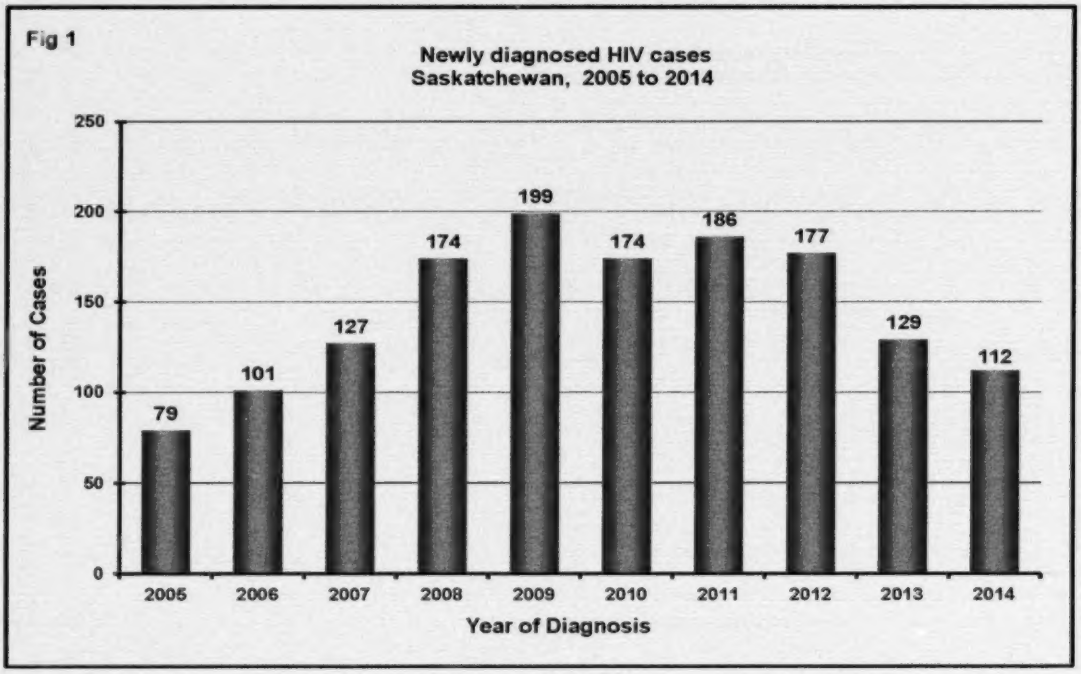
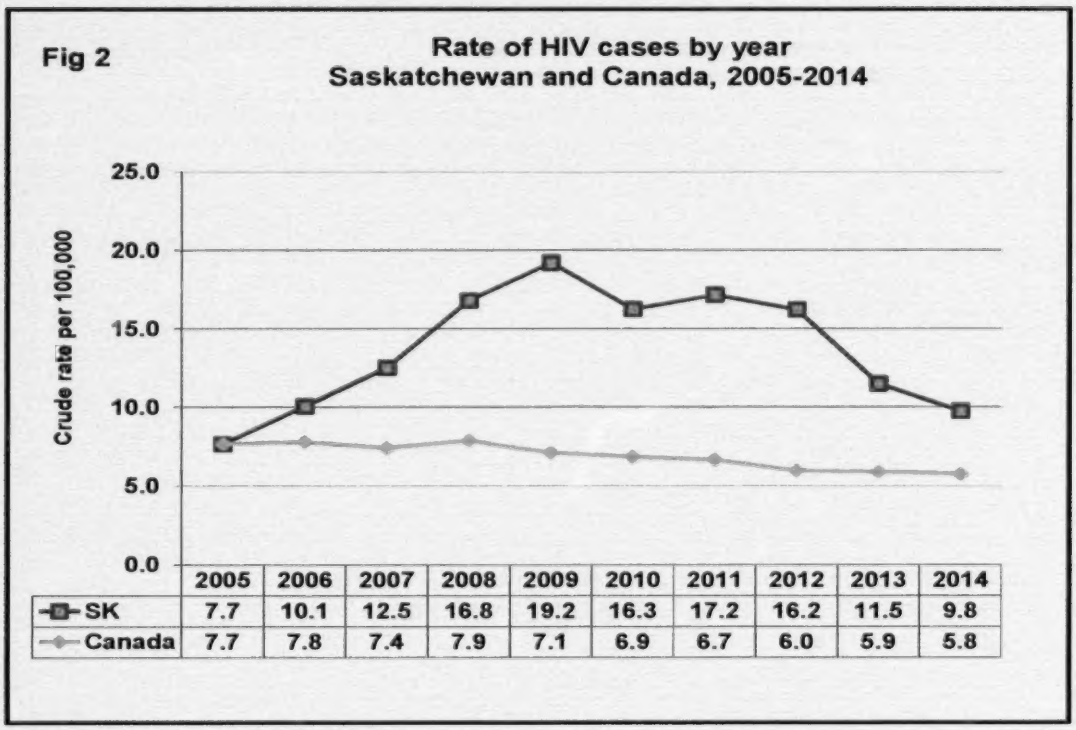


Fig 2



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
SK	7.7	10.1	12.5	16.8	19.2	16.3	17.2	16.2	11.5	9.8
Canada	7.7	7.8	7.4	7.9	7.1	6.9	6.7	6.0	5.9	5.8

Canadian rates from the Public Health Agency of Canada

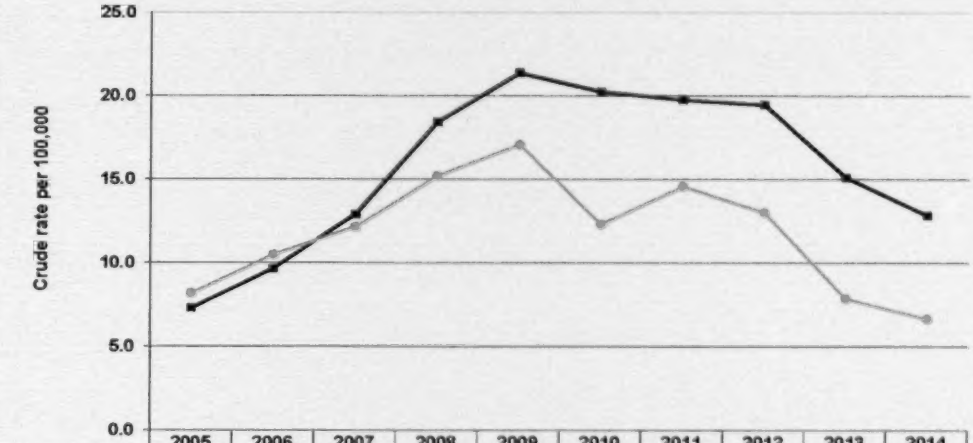
There was a noteworthy drop in both male and female HIV rates in 2014

Male cases decreased by 33% from a peak of 110 cases in 2009 to 74 cases in 2014. Likewise, female cases declined 57% from 89 cases in 2009 to 38 cases in 2014. Over the past ten years, male cases accounted for the majority of HIV positive cases in the province compared to females. The male and female proportion of cases remained unchanged from 2013, however the decline in the number of female cases from 2013 was 14% and 13% in male cases. This decrease is reflected in both gender rates per 100,000 population. The overall male and female rate trend showed a parallel declining pattern since 2011 with the male rate of decline being double that of females. (Figure 3)

In 2010 the female rate dropped sharply but rebounded to 14.6 per 100,000 in 2011 with a slight decrease to 13.0 per 100,000 in 2012 followed by a notable drop to 7.9 per 100,000 in 2013 and 6.7 in 2014. The drop in female cases in 2010 could be related to a number of reasons including fewer women presenting for testing rather than a true decrease in HIV infection among females. The male rate which fluctuated little between 19.4 and 21.4 cases per 100,000 in the four years, 2009 to 2012, dropped sharply to 15.1 per 100,000 in 2013 and further declined to 12.8 per 100,000 in 2014. (Figure 3)

Fig 3

HIV case rates by gender
Saskatchewan, 2005 - 2014



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Male rate	7.3	9.7	12.9	18.4	21.4	20.2	19.7	19.4	15.1	12.8
Female rate	8.2	10.5	12.1	15.2	17.1	12.3	14.6	13.0	7.9	6.7

Year of Diagnosis

There was a marked decrease among adult cases between 20-49 years of age

HIV male cases ranged in age from pre-teen to 70 years in 2014 while female cases ranged in age from teenage to over 70 years. Cases aged 20 to 49 years comprised 73% (82 cases) of the 112 cases in 2014, a marked decrease from the average annual proportion of 82% over the previous ten years. This decrease was noted in all three 10-year age groups within the 20-49 year age category.

HIV rates declined among young females 20-24 years in 2014

The rate of HIV infection showed a sustained decrease in 2014 among young adults of both sexes aged 20-29 years. The disease rate among males in this age group peaked at 29.1 per 100,000 in 2009 before an annual decline to 15.9 per 100,000 in 2014. (Figure 4) Female rates in this age group also declined to 26.9 per 100,000 in 2011 from a high of 52.1 per 100,000 in 2009 but rebounded to 33.2 per 100,000 in 2012 followed by a marked drop in 2013 to 8.7 cases per 100,000. This rate was sustained in 2014 at 8.5 per 100,000 (7 cases). (Figure 5)

While the number of male cases aged 20-24 years fluctuated between three and ten cases over the past decade, of note is the marked decline in the number of infected 20-24 year old females since 2012 when over half of females in the 20-29 year age group were between 20 and 24 years (14 of 26 cases). In 2014, less than one-fifth of cases in young females aged 20-29 years were between 20 and 24 years (1 of 7 cases).

The proportion of HIV infected cases shifted to the 50+ age group

Though the age group specific rate is low, as cases among the younger age groups decreased, the proportion of total cases shifted to the 50+ age group over the past five years. The incidence rate in 2014 among female cases aged 50 years and older remained comparable to previous years (3.0/100,000), however as a proportion of total female cases, the cases in this age group doubled from 9% in 2013 to 16% in 2014 (6 cases). The same pattern was seen among males cases where the rate of 10.7/100,000 was comparable to earlier years but as a proportion of total male cases, the proportion increased from 19% in 2013 to 27% in 2014 (20 cases).

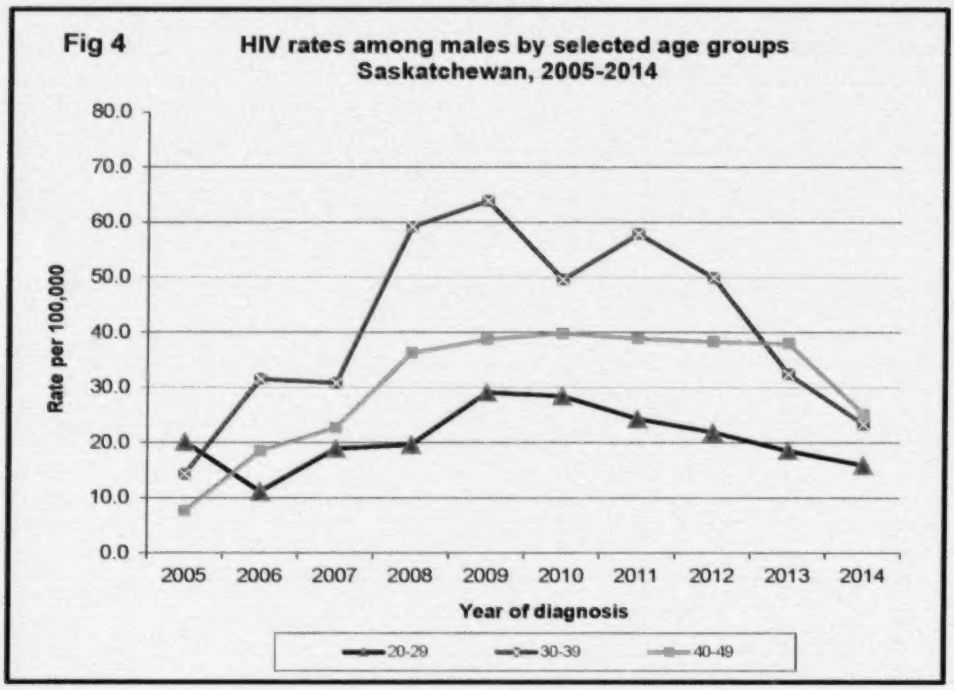
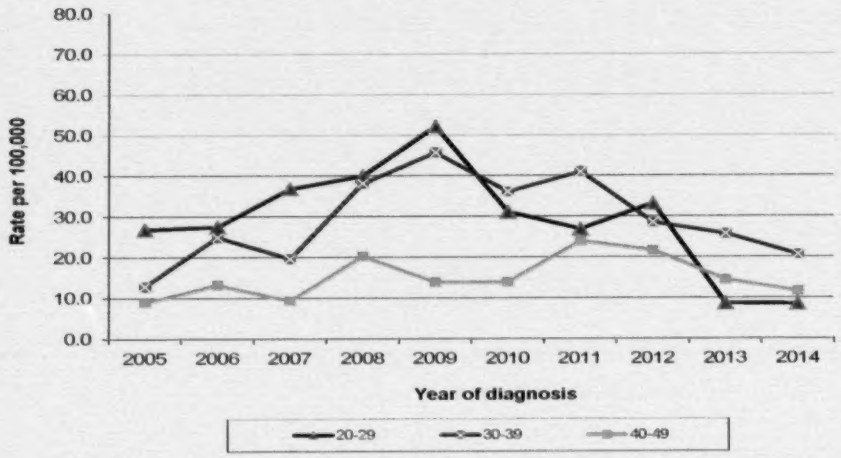


Fig 5 **HIV rates among females by selected age groups Saskatchewan, 2005-2014**

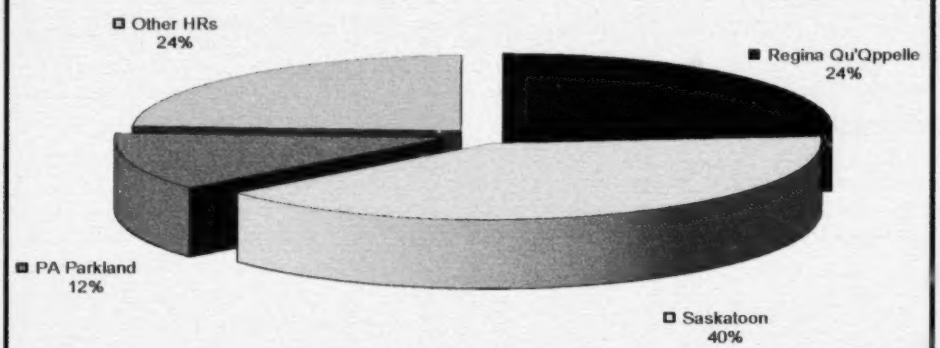


The majority of people living with HIV were from the three largest urban centres

The highest proportion of HIV cases were accounted for among the urban populations of Saskatoon, Prince Albert Parkland, and Regina Qu'Appelle Regional Health Authorities. This geographic distribution of HIV cases was seen even prior to 2004 when the number of HIV cases began to rise in the province.

From 2005 to 2014, 40% of the cases within the province occurred in the Saskatoon Health Region, compared to Regina Qu'Appelle Heath Region (24%) and Prince Albert- Parkland Health Region (12%). (Figure 6)Regina Qu'Appelle Health Region has seen a two-fold decrease in HIV rates from 19.7 per 100,000 in 2009 to 9.4 per 100,000 in 2014 while Saskatoon Health Region saw a three-fold decrease in the same period (30.6 vs. 9.0 per 100,000). The 2014 rate in Prince Albert Parkland Health Region (18.2 cases per 100,000) approached twice that of the other two health regions but this also was a decline from a peak of 31.6 per 100,000 in 2010. The proportion of 2014 cases was almost equal in Regina Qu'Appelle Heath Region (24%) and Saskatoon Health Region (28%) while cases in Prince Albert Parkland Health Region comprised 13% of cases.

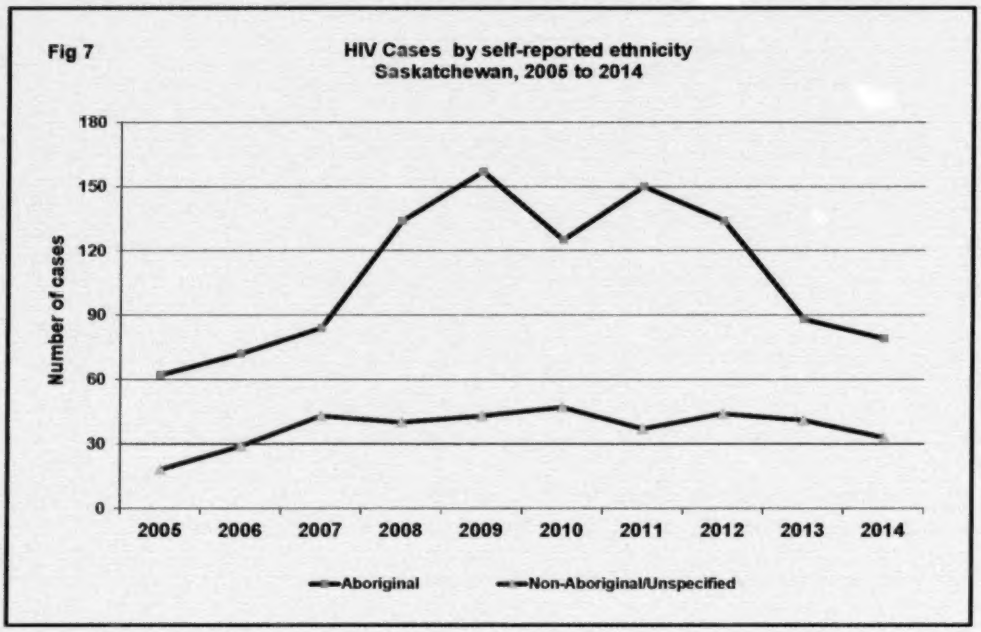
Fig 6 **Proportion of HIV cases reported by selected health regions Saskatchewan, 2005-2014**



There was decreasing trend in people with HIV who self-reported Aboriginal ethnicity

People self-reporting as Aboriginal ethnicity continue to be highly represented among newly diagnosed HIV cases in the province, though this number declined markedly from 2012. In 2014, 79 cases (71% of total cases) of all newly diagnosed HIV cases self-reported Aboriginal ethnicity (Figure 7), a decrease from 88 cases diagnosed in 2013 and a 44% decrease from the average annual number of 140 cases between 2008 and 2012. The number of cases self-reporting other ethnicities, including Caucasian, decreased to 33 cases in 2014 from an annual average of 42 cases in the previous five years. There was no missing ethnicity data in the 2014 case records.

Female cases reporting Aboriginal ethnicity comprised 79% (30 of 38 cases) of all female cases for 2014 and 38% of all Aboriginal cases, a decrease from the average 46% in the years 2009 to 2013. Males self-reporting Aboriginal ethnicity made up 62% (49 of 74 cases) of all male cases this year.



Injection drug use remained the highest self-reported risk for acquiring HIV infection

Injection drug use continued to be the most commonly reported risk exposure. The number of people with HIV infection acquired through injection drug use increased to a peak of 157 cases in 2009, in part related to enhanced case finding. (Figure 8) In 2013, 56% of cases (72 cases) self-reported injection drug use as their main exposure to the virus, a decrease from 67% of cases in 2012. The proportion reporting injecting drugs in 2014 continued to decrease to under half (49%) of all HIV cases (55 cases). Men comprised 60% of infected individuals self-reporting this exposure. The age range for all HIV cases in 2014 reporting injection drug use was early twenties to over 60 years. Over two-thirds (79%) of male HIV cases reporting injection drug use were between 25 and 50 years of age and 77% of female cases reporting this exposure were between 25 and 50 years of age.

Heterosexual activity reported by HIV cases remains the second most commonly reported exposure risk. A steady upward trend in cases reporting this risk factor emerged in 2006 and stabilized in 2014 at 32 cases. Heterosexual activity includes partnering with individuals at risk for contracting HIV. Since 2005, the highest proportion of heterosexually exposed male cases has consistently been among those aged 20-49 years (64%) and another one-third (33%) being 50 years and older. In 2014, three of ten female cases reporting heterosexual activity as their only risk exposure, one in the 15-19 year age group, citing her partner as likely at high risk for being infected. Five other female cases, two in the 50 year and older age group, identified heterosexual partnering with an individual having no known risks for being HIV infected. Two others were from countries where HIV is endemic and transmitted mainly through heterosexual activity.

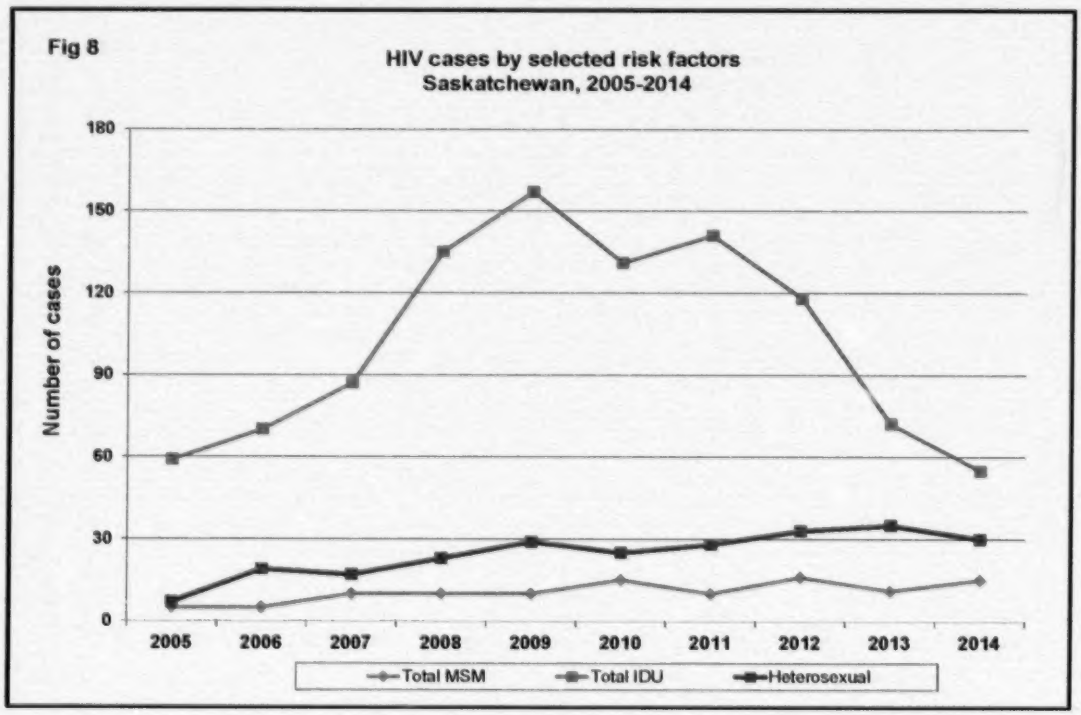
Unlike other jurisdictions in Canada, in Saskatchewan, men engaging in sex with other men (MSM) has been a lesser reported risk among HIV positive individuals. However, the trend is gradually increasing. An annual average of five cases was self-reported in the first half of the surveillance decade, 2005-14, compared to eleven cases annually in the latter half. The number of cases fluctuated widely from year to year. In the first part of the decade, 2005-2009, 6% of total cases (40 cases) reported MSM though one-third (13 cases) of these also declared IDU as a risk for exposure. In the latter half of the surveillance decade, that is 2010-2014, the proportion increased to 9% of total cases (67 cases) self-reporting MSM as a risk exposure, albeit, 11 also declared injecting drugs. In 2014, MSM was reported by 15 cases (13% of total cases). None reported injecting drugs. All but two cases were between the ages of 20 to 39 years.

Endemic risk exposure includes people whose origin is in a country where HIV infection is endemic and transmitted mainly through heterosexual activity. From 2005-2014, <1% (13 cases) of HIV positive individuals reported this risk exposure. The number of HIV cases from endemic countries has dropped sharply over the past decade to one to three cases annually.

No babies were born infected with HIV in 2014. Between 2002 and 2010, nine cases of perinatal transmission occurred: 2005 (3 babies), 2007 (4 babies) 2009 (1 baby) and 2010 (1 baby). Infected babies are born mainly to mothers who are unaware of their HIV status at time of delivery or do not seek prenatal care and where the newborn does not receive prophylactic treatment post delivery.

No risk exposures for HIV infection could be identified by two people in 2014.

Fig 8



The majority of people diagnosed with HIV in the past decade are still alive

Between 2005 and 2014, 1458 people were diagnosed with HIV, of whom 1255 people (86%) are still alive. Of the 203 people where year of death is known, 159 lived with HIV between one and nine years following their diagnosis. Forty-four died in the same year they were diagnosed with HIV. The primary cause of death may not have been directly related to their HIV infection.

The profile of people living with AIDS in Saskatchewan

The number of females living with AIDS increased in 2014

Over 425 people in Saskatchewan are living or have lived with an AIDS defining illness since 1984 when HIV/AIDS became a provincially notifiable disease. Seventy percent (141 of 200 cases) were diagnosed with AIDS in the last five years (Figure 9) This reflects the progression of HIV infection to AIDS disease among those who may not have accessed treatment early.

The 45 female AIDS cases diagnosed in the latter half of the surveillance decade, 2005-2014, was over double that of the previous five years (20 cases) and constituted almost half of all female AIDS cases diagnosed in Saskatchewan since 1988 (105 cases). For males, 96 of 134 cases (72%) were diagnosed in the latter half of the decade and constituted 30% all male AIDS cases diagnosed in Saskatchewan since 1985 (321 cases). The seven female AIDS cases diagnosed in 2014 ranged between young adults to mid 50 years of age. The 21 male AIDS cases in 2014, ranged in age from young adult to over 60 years.

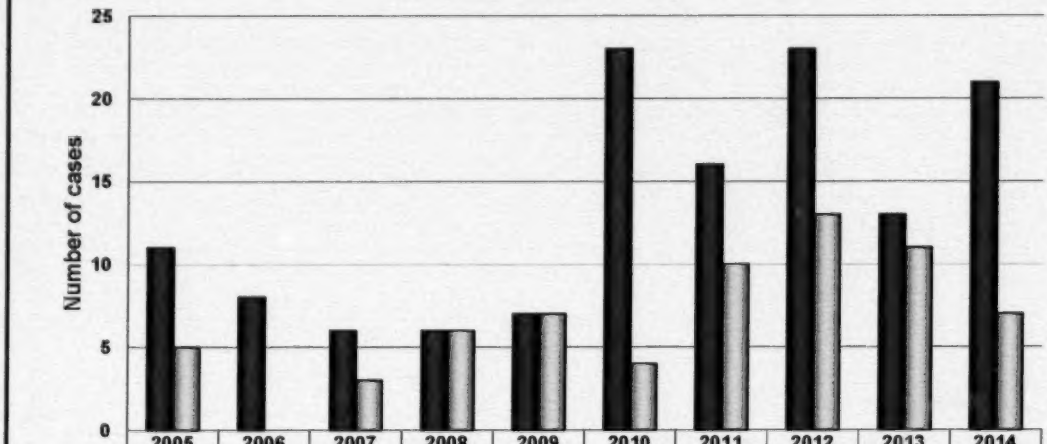
Many individuals were diagnosed with AIDS late in their disease progression

The length of time between first being tested positive for HIV and being diagnosed with AIDS in 2014 ranged from 0 to 8 years. Half of the AIDS cases (14 of 28 cases) in 2014 had their initial positive HIV test at the same time they were diagnosed with an AIDS defining illness, a proportion comparable to previous years.

Only five of the 28 HIV cases whose infection progressed to AIDS in 2014 have died. (Figure 10) Almost half of those diagnosed with AIDS in the past surveillance decade, 2005-2014, are still living (96 of 200 cases).

Fig 9

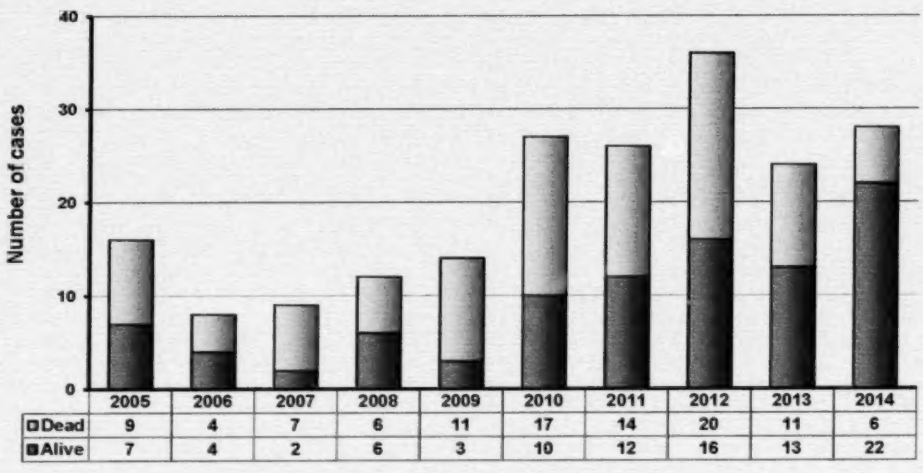
AIDS cases by year and gender
Saskatchewan, 2005-2014



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
■Males	11	8	6	6	7	23	16	23	13	21
□Females	5		3	6	7	4	10	13	11	7

Year of AIDS diagnosis

Fig 10 **Life status of AIDS cases by year of diagnosis Saskatchewan, 2005-2014**



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Dead	9	4	7	6	11	17	14	20	11	6
Alive	7	4	2	6	3	10	12	16	13	22

Technical notes and data limitations

The *Public Health Act, 1914* and Disease Control Regulations mandate reporting of HIV and AIDS cases to the local Medical Health Officer and the Saskatchewan Ministry of Health.

Surveillance data is reflective only of the number of cases who are tested and diagnosed with HIV. This data does not reflect those individuals who have not yet been identified. HIV cases counts are based on the year of first positive lab result, therefore do not necessarily represent the number of new infections that year as individuals can be first tested years after their infection. The exception is infant cases born to infected mothers where date of diagnosis is assigned by the infant's year of birth.

Only first-time HIV diagnoses are included in this report. All repeat positive and follow-up tests are removed.

This report is based on the number of HIV cases diagnosed by laboratory confirmation while residing in the province of Saskatchewan. Cases known to be reported outside of Saskatchewan are not counted in this province's statistics.

Individuals tested by Citizenship and Immigration Canada, as part of the immigration process, are not included in this report.

Health region proportions do not include Aboriginal people identified as living on First Nations reserves located within the boundaries of the regional health authorities. First Nations individuals known to be living on reserve at the time of HIV diagnosis are included in the "other health authorities" category.

Delays occur in the reporting of HIV and AIDS data, specifically for ethnicity and risk exposure categories, as well as for AIDS cases and death information. As updated information becomes available, case data may be reassigned based on this information. As such, numbers may differ from previous reports or at the time of next year's report.

Data in this report is based on information extracted by the Ministry of Health from the EpiData HIV database on July 16, 2015.

Ethnicity is self-reported. For purposes of this report, Aboriginal persons comprise Inuit, Métis, and First Nations. The non-Aboriginal classification includes Caucasian, Black, Latin-American, Asian, South Asian and other ethnicities.

Risk exposure information is self-reported, thus limiting the accuracy and completeness of the data. In this report HIV and AIDS cases are assigned to a single exposure category based on a nationally recognized hierarchy of risk for acquiring the virus. When more than one risk factor is provided, cases are classified as the exposure category that is highest in the hierarchy:

MSM – Men having sex with men.

IDU – Injection Drug Use.

MSM/IDU – Men reporting both injection drug use and having sex with men.

Het-Exposure – Heterosexual exposure includes partnering with an individual at risk for HIV, including those from an endemic country, or partners who have no known risk for HIV.

Endemic – Origin from an HIV endemic country where heterosexual transmission is the main exposure. Cases from endemic countries under 15 years of age are not included in the count of heterosexual cases.

Perinatal – Infected newborns of an HIV positive mother.

NIR – No identified risk, unknown risk and less likely sources of infection.

Heterosexual exposure category in this report includes both those who report heterosexual contact with someone who is either HIV-infected or who is at increased risk for HIV infection. This category also includes those individuals where heterosexual contact is the only exposure activity reported.

Cases stating both MSM and IDU as their risk for acquiring HIV have been included in both the IDU and MSM risk exposure categories in the risk analysis.

The annual incidence pattern of AIDS cases does not necessarily reflect the year in which the client was infected, but rather the year in which the individual was diagnosed with an AIDS defining illness. Individuals reported with AIDS may have been diagnosed with HIV in jurisdictions outside of Saskatchewan.

All Saskatchewan HIV rates cited in this report are reported as crude rates. Rates were calculated by dividing the total number of HIV cases by the Saskatchewan covered population, expressed as the number of cases or events per 100,000 population.